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footless grub. Early in April it changes to a pupa, and a month after the beetle appears, and in a few days deposits its egg under the bark of old pine trees. It also oviposits in the terminal shoots of pine saplings, dwarfing and permanently deforming the tree. Associated with this weevil we found the smaller, rounder, more cylindrical, whitish grubs of the *Hylurgus terebrans* (Fig. 3), which mines the inner layers of the bark, slightly grooving the sap-wood. Later in April it pupates, and its habits accord in general with those of *Pissodes strobi.* Another Pine-weevil (*Hylobius pales*, Fig. 4) also abounds at this time.

Fig. 3.

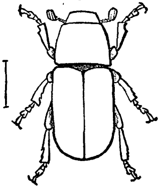
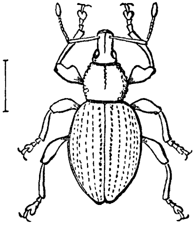


Fig. 4.



Cylindrical bark-borers, which are little round weevil-like beetles, are now flying about fruit-trees, to lay their eggs in the bark. Associated with the *Pissodes*, we found in April the galleries of *Tomicus pini*, branching out from a common centre. They are filled up with fine sawdust, and, according to Dr. Fitch, are notched in the sides "in which the eggs have been placed, where they would remain undisturbed by the beetle as it crawled backwards and forth through the gallery." These little beetles have not the long snout of the weevils, hence they cannot bore through the outer bark, but enter into the burrows made the preceding year, and distribute the eggs along the side (*Fitch*). Another *Tomicus*, more dangerous than the preceding, feeds exclusively in the sap-wood, running solitary galleries for a distance of two inches towards the centre of the tree. We figure *Tomicus xylographus* Say (Fig. 5). It is the most formidable enemy to the white pine in the North, and the yellow pine in the South that we have. It also flies in May. *Ptinus fur* (Fig. 6) is now found in out-houses, and is destructive to cloth, furs, etc., resembling the Larder-beetle (*Dermestes*) in its habits. It is fourteen-hundredths of an inch in length.

Fig. 5.

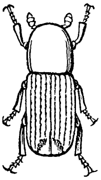
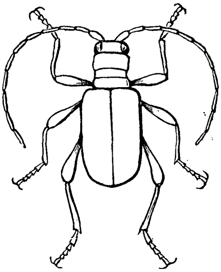


Fig. 6.



# PROCEEDINGS OF SCIENTIFIC SOCIETIES.

Academy of Natural Sciences. *Philadelphia, Oct.* 1, 1867.—Dr. Hays exhibited a fine specimen of Malachite; he also exhibited several specimens of hair from Albino negroes. Dr. Leidy spoke of the white Albino, and mentioned that the term "wool" was a misnomer as applied to the hair of the negro; the differences between the races being those pertaining to the form of the shaft.

*Oct.* 15*th.*—Dr. E. Coues, U. S. A., presented a paper entitled, "Notes on a Collection of Mammals from Arizona." Professor Holmes, of Charleston, exhibited specimens of fossil remains of extinct and recent animals, accompanied by bones of man, with pottery, stone arrow-heads, and hatchets from the postpliocene strata. He also called attention to the geology of the Charleston basin. Professor Leidy made some remarks in continuation of the subject; also noticed cases where the soft tissues of extinct animals have been preserved.

*Oct.* 22*d.* — Professor Wood presented some remarks on a fresh-water alga from the thermal springs in Mono county, California, which was said to grow in water having a temperature of from 120° to 136° F.

A paper was read entitled, "Notes on a Collection of Californian Myriapoda, with the description of a new *Lithobius* from Illinois," by Horatio C. Wood, jr.

*Oct.* 29*th.* — Mr. Lyman exhibited a map of the Pennsylvania coal regions, accompanied by remarks on the conglomerate formation of Sullivan county; he also called attention to the bending of a limestone post by its own weight, the specimen now being in the collection of the Academy.

*Nov.* 5*th.* —Dr. Leidy directed the attention of the members to a specimen of a fossil Peccary, *Dicotylus nasutus* Leidy. Professor Cope exhibited teeth of a new Cretacean, *Squalodon mento* Cope; specimens of the jaw of the *Squalodon atlanticus* Cope; also many bones of a new whale, which was named *Megaptera brachychira* Cope, with other fossils from the Miocene formation of Charles county, Maryland.

*Nov.* 12*th.*—Professor Cope read a paper entitled, "An addition to the Vertebrate fauna of the Miocene period of the United States." Dr. Leidy read a letter from Professor Hayden, describing the Lignite beds of Laramy plains. Professor Cope spoke of the formation of natural coke which he had observed in Eastern Virginia. Dr. LeConte made remarks, illustrated by specimens, upon the tertiary coal-beds of New Mexico in the vicinity of the Rocky Mountains, and the Cretaceous coal-beds of the Rio Grande valleys. Both regions were regarded by him as capable of supplying abundant fuel for railroad, metallurgic, and manufacturing purposes. He also mentions beds in the vicinity of Denver of great thickness, from eleven to sixteen feet, free from impurities.

BOSTON SOCIETY OF NATURAL HISTORY. *Oct.* 16, 1867.—Prof. Agassiz remarked upon the antiquity of man. He said that fifty years ago both the learned and unlearned believed they possessed a trustworthy chronology of human history. Historians struck the first blow at this assumption by their researches into the successive dynasties which had ruled over Egypt. Their lead was quickly followed in the different departments of science, until now we are forced to cast aside the ancient beliefs and construct our chronology from a new and independent basis.

Twelve years ago, Ferdinand Keller, of Zurich, by his examination of the lake deposits of Switzerland, brought to light proofs of the existence of races of men with new characters of civilization. These discoveries astonished the world, and have since given rise to a new science, new societies, and new museums. Humanity is now connected with geological phenomena.

Formerly the presence of such large mammals as the Elephas primigenius, Rhinoceros tichorinus, Bos primigenius and Ursus spelaeus, was considered the dividing line between geological and human history,—now the extensive researches of such able naturalists as Lartet, Von Baer, Rütimeyer, and Brandt, have proved that these quadrupeds were once contemporaneous with man. The question before us is whether we can establish a successive chronology of events since the appearance of these animals upon the earth. Brandt has attempted to show that they were living within the historical period, and has argued therefrom that the native cattle of Europe were developed from the Bos primigenius. The argument for their recent extinction is drawn from documents hitherto partly unknown, because written in the Sclavonic tongue; these represent the existence of Bos primigenius in the forests of Lithuania and Poland up to the 11th and 13th centuries. The presence of Cervus megaceros in the marshes of Europe up to the 14th century is also made probable.

There is no doubt that the fauna of the diluvial deposits and of the European caves consisted of animals, some of which, at least, had a circumpolar geographical distribution, and that the southern limits of animals now living in the polar regions was once much greater than now; remains of the reindeer have been found all through France to the Pyrenees and in Southern Germany. We find that these mammals had intimate relations with the ice period, and it becomes necessary for us to investigate the extent of the ice-fields at the time when the glacial period was at its height. Professor Agassiz believed that the changes in extent which our ice-fields have undergone during successive periods, would furnish us with data for our chronology. In America, the ice-fields, at the time of their greatest extension with indefinite limits, reached the 32d degree of north latitude. In Europe they extended as far as the plains of Lombardy. Subsequent to this came a limited glacial period, in which the Southern and Middle States were freed from glaciers, but from Maine westerly the country was still ice-bound. During a third period the ice retreated to the northern shores of Lake Superior and the slopes of Mt. Katahdin, while in a fourth period, the one before the present, the continent was clothed with vegetation up to the hilly parts of Canada.

In answer to the question whether we had any means of connecting chronology with these facts, it might be stated that none of the cave animals or the large mammals which have been mentioned, have been proved to exist prior to the time of the greatest extent of the ice-fields, and, as it can no longer be doubted that man lived contemporaneously with these animals, he believed that, with the waning of the ice-period, began the era of primeval man. In the successive epochs of the ice, indicated by the retreating ice, we have a *relative* chronology; when we ask for more specific statements of age, we find ourselves at once at a loss for an answer. Some indications might be seen in the abrasions of rocks of unequal hardness, and instances were cited in illustration of this.

In the course of the discussion which followed these remarks, Professor Agassiz said he hoped for great results from the investigations now undertaking in our own country, and believed that marks of the reindeer would yet be found in the Carolinas.

## CORRESPONDENCE.

J. H. F., New York.—There is unfortunately no complete work on American Cryptogamic Botany. For works on Lichens, however, see the NATURALIST, Vol. I, p. 326. You will find the English works of Mr. Cooke, noticed in this number, very useful.

F. W. W., Concord, Mass.—There is no complete American work on Taxidermy. See, however, NATURALIST, Vol. I, p. 160, 321.

O. F., Needham Plain, Mass.—For works on American Entomology, see NATURALIST, Vol. I, p. 160, 441, and the last number. Subscriptions to "The Guide to the Study of Insects," which will be published in the autumn, may be sent to us.

L. A. R., Bucks, Ohio.—The specimen you inclose is a fossil gigantic Club-moss, *Lepidodendron*, which occurs abundantly in the shale inclosing coal-beds. Specimens from your region would be very acceptable. The Kangaroo Mouse you speak of is the *Jaculus Hudsonicus*, an animal well known as inhabiting nearly all the United States. The species of *Dipodomys*, to which Dr. Coues refers in his papers in the NATURALIST, as "Kangaroo Rats and Mice," are not known to occur east of the Mississippi.

N. T. T., Bethel, Me.—The substance to which you refer is the fresh-water Sponge (*Spongilla fluviatilis*). It occurs commonly in the ponds and sluggish brooks and rivers of Maine, and southward.

## BOOKS RECEIVED.

*The American Beaver and his Works.* By Lewis H. Morgan. 8vo. Philadelphia, 1868. J. B. Lippincott & Co.

*An Address on the Propriety of continuing the State Geological Survey of California, delivered before the Legislature at Sacramento, Jan.* 30, 1868; *to which are appended two letters relative to the Progress of the Geological Survey, etc., etc.* By Professor J. D. Whitney. San Francisco, 1868. 8vo. pp. 23, 14, 15, 14.

*Papers from "The American Beaver."* By W. W. Ely. Philadelphia, 1868. J. B. Lippincott & Co. 8vo. pp. 46—77, 287—306.

*The Field.* March 7, 14, 21. London.

*Cosmos.* February 15, March 7. Paris.

*American Bee Journal.* April. Washington.

*Notes on a Collection of Mammals from Arizona.* By Elliott Coues, M. D., U. S. A. 8vo. pp. 4.